

FIG. 1

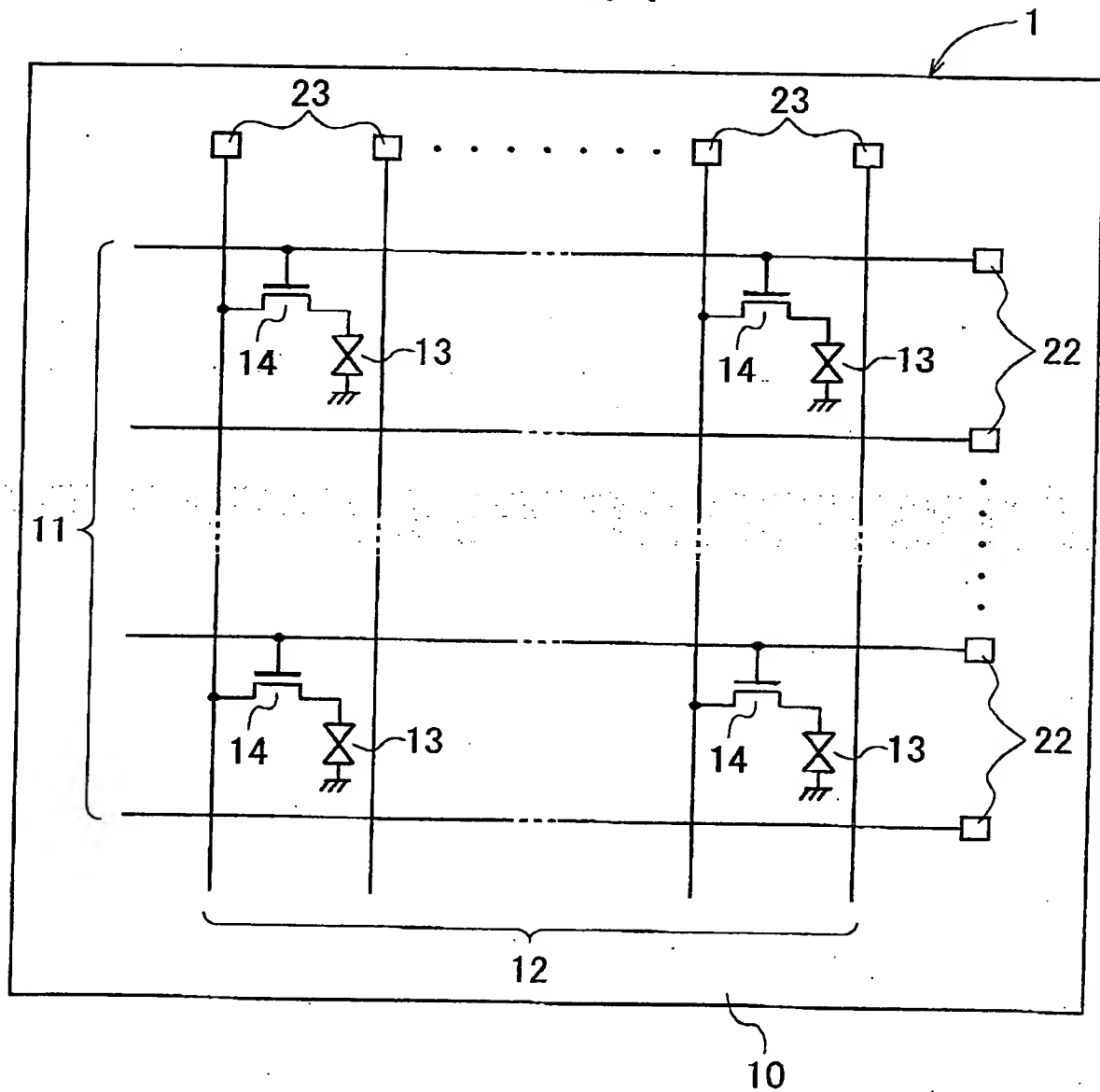


FIG. 2A

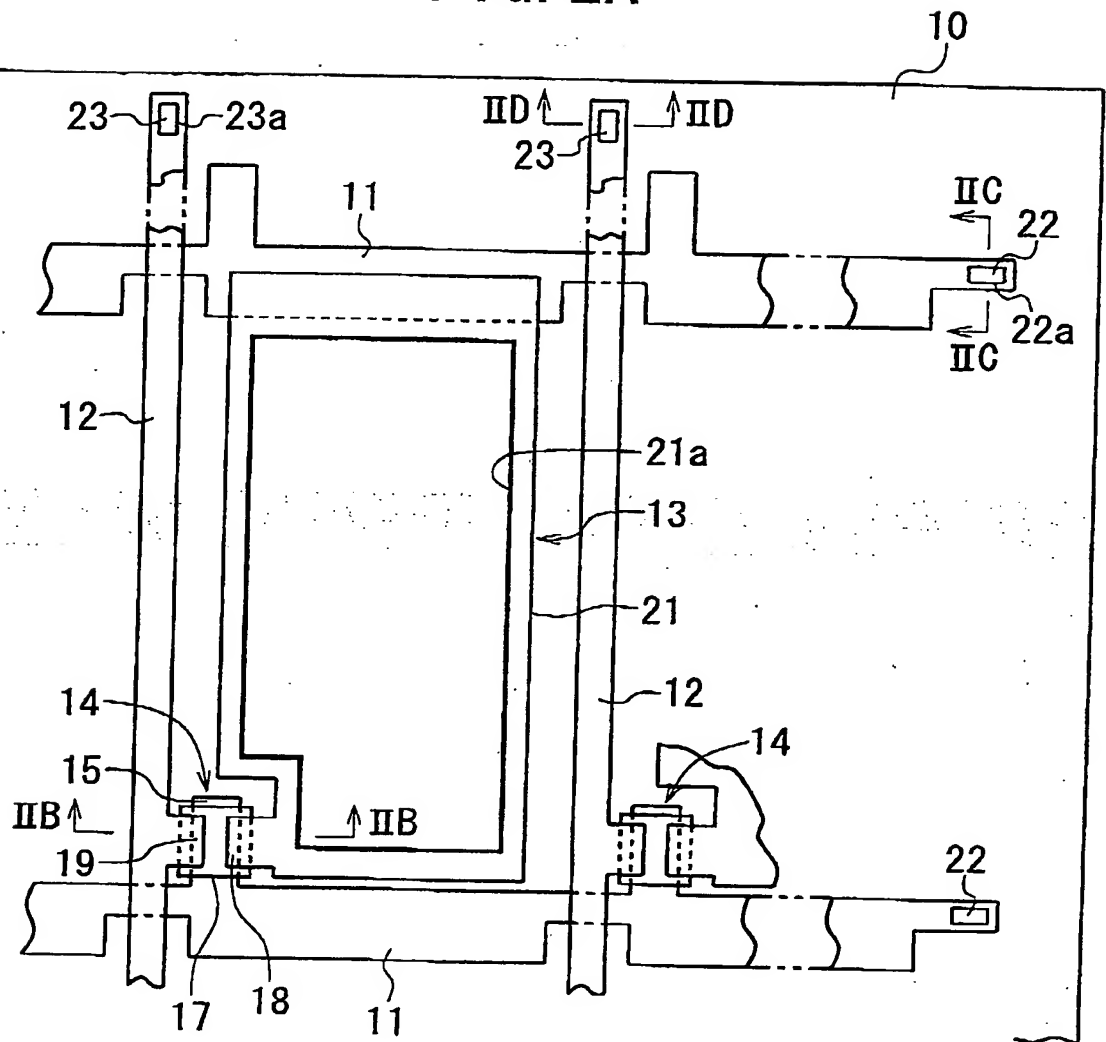


FIG. 2B

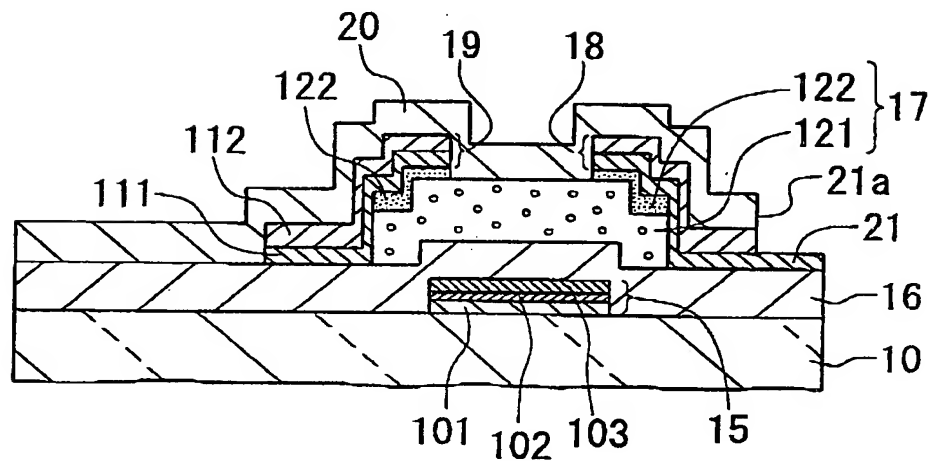


FIG. 2C

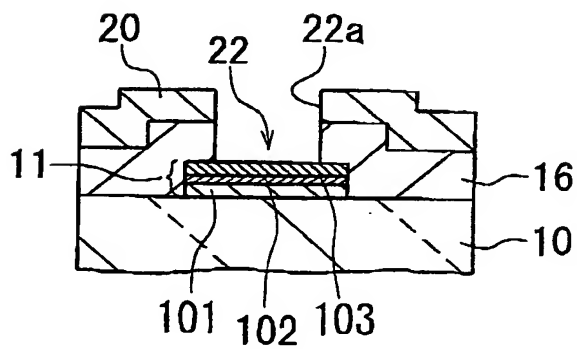


FIG. 2D

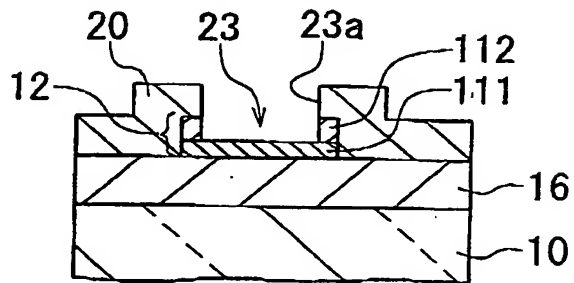


FIG. 3A

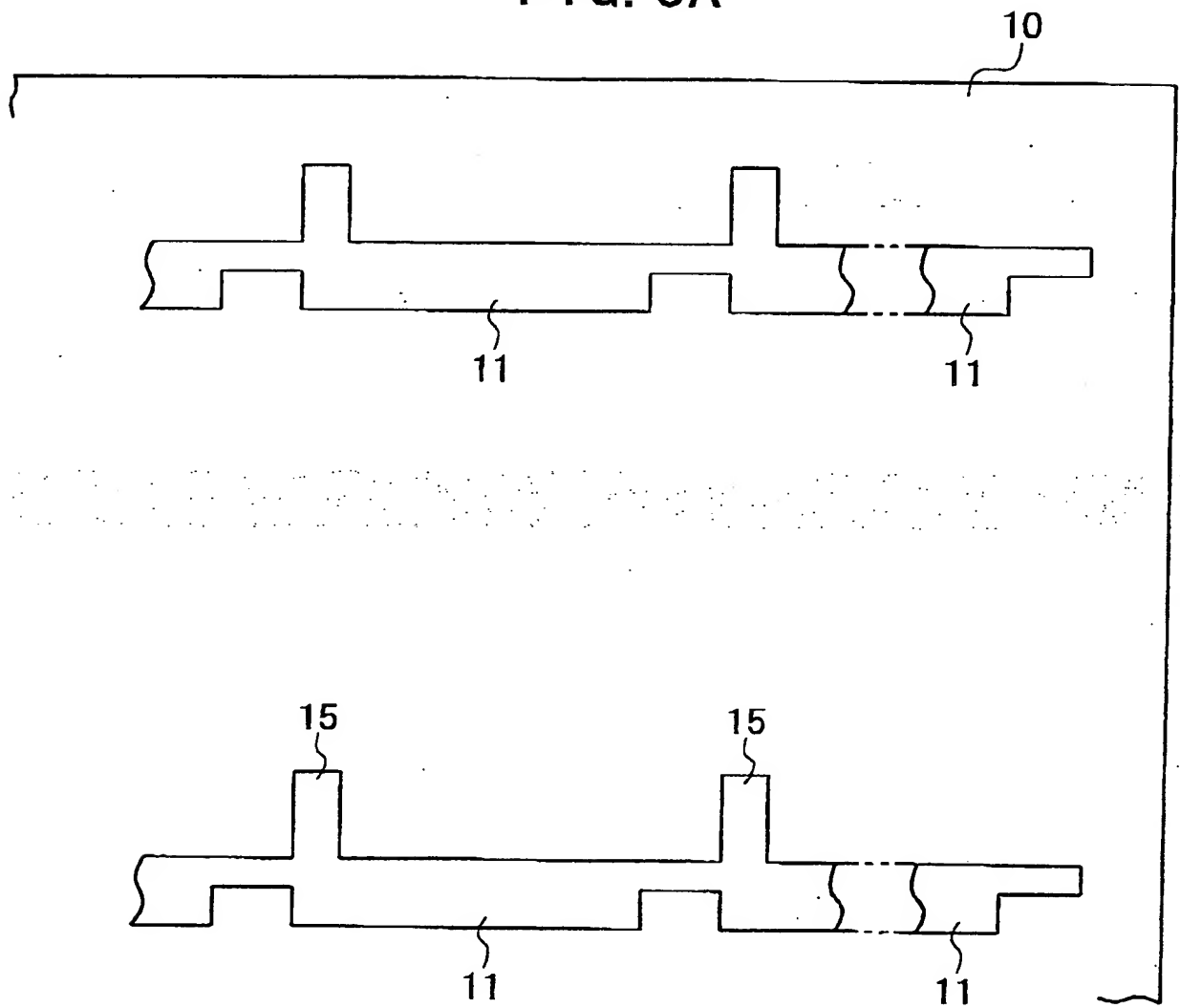


FIG. 3B

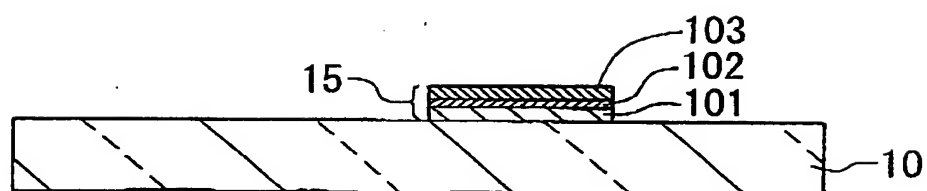


FIG. 3C

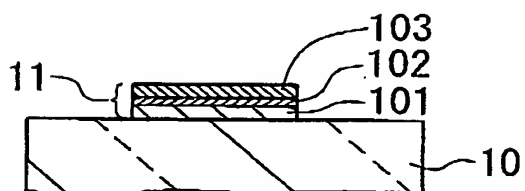


FIG. 3D



FIG. 4A

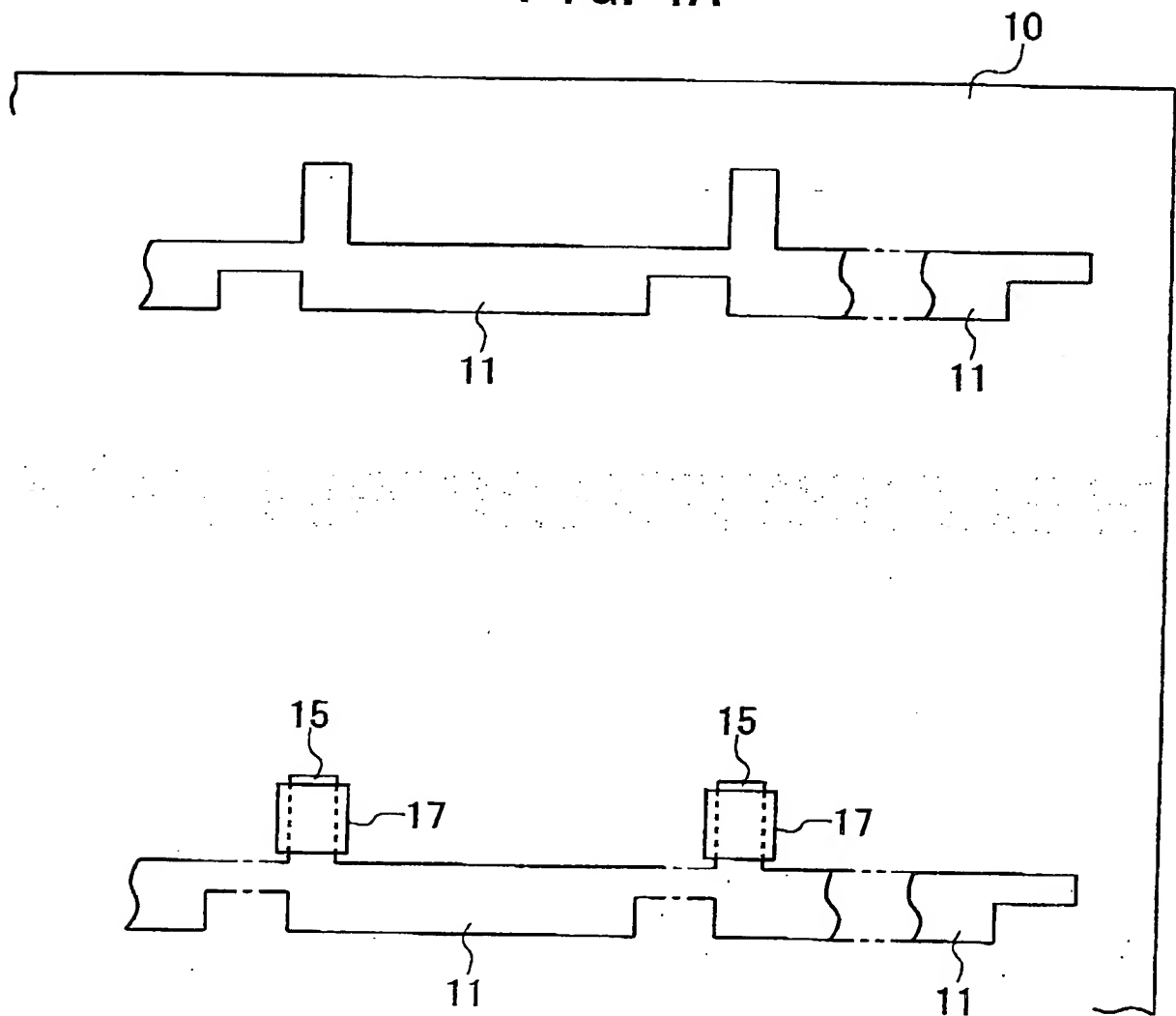


FIG. 4B

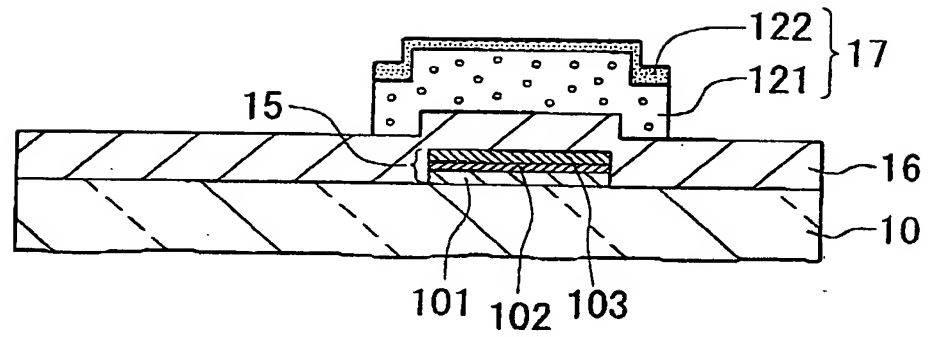


FIG. 4C

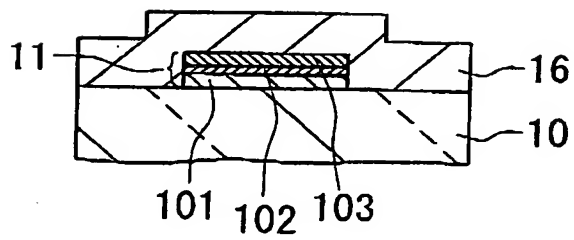


FIG. 4D

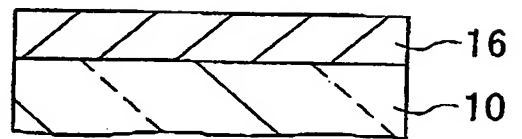


FIG. 5A

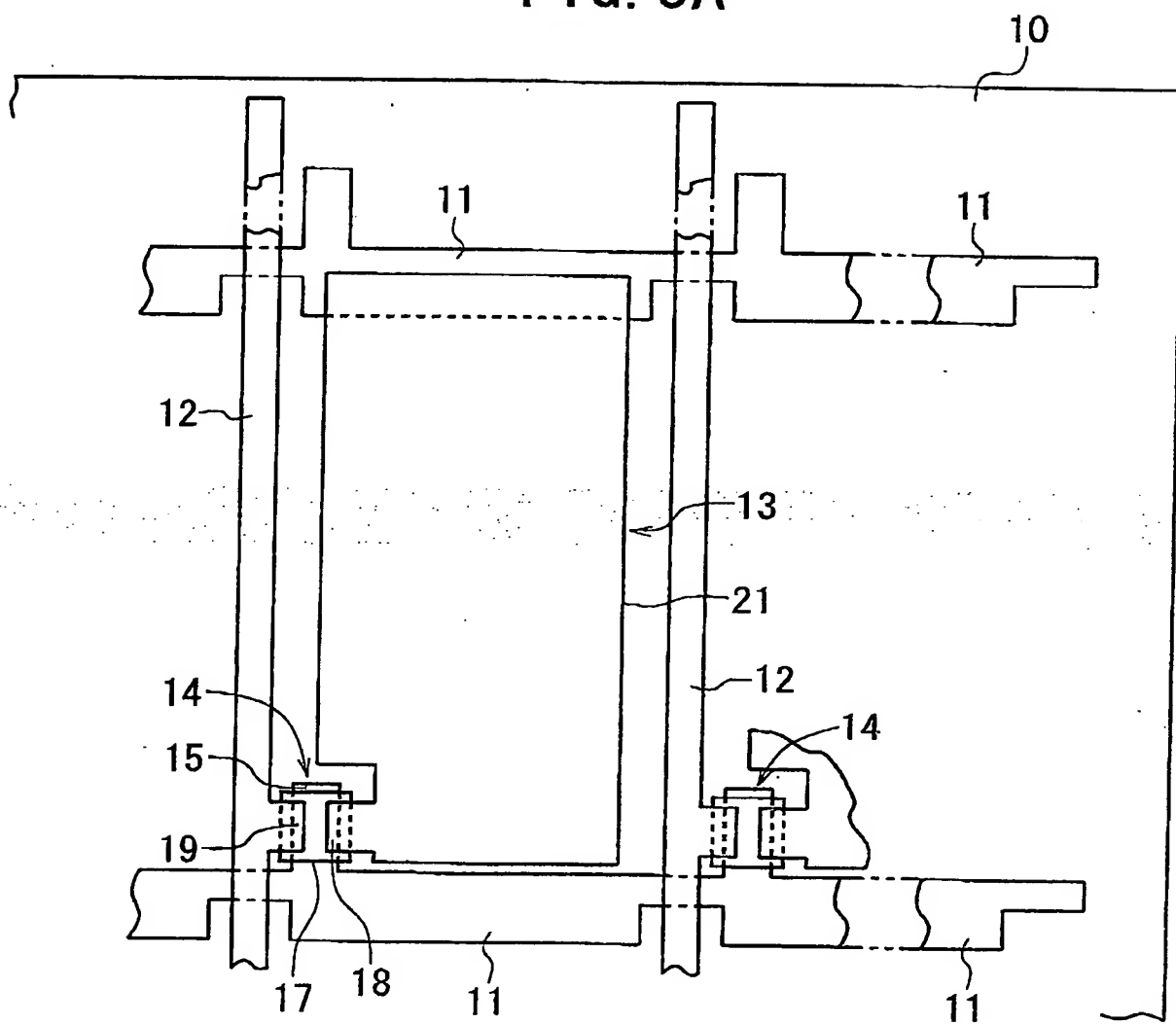


FIG. 5B

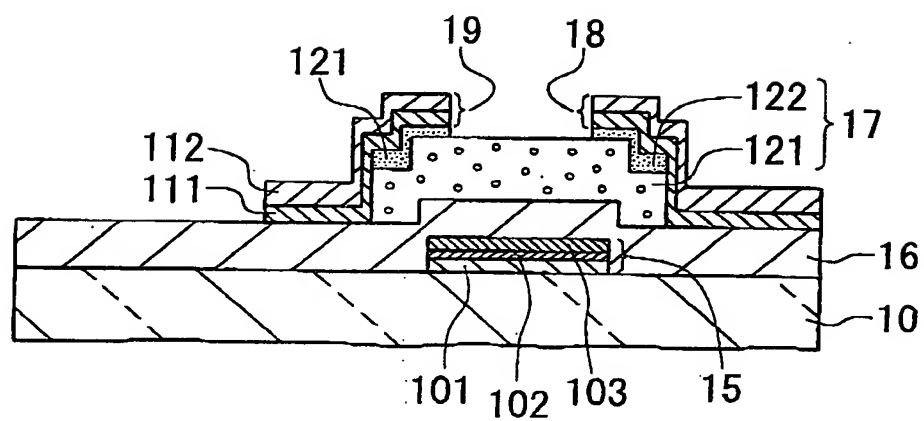


FIG. 5C

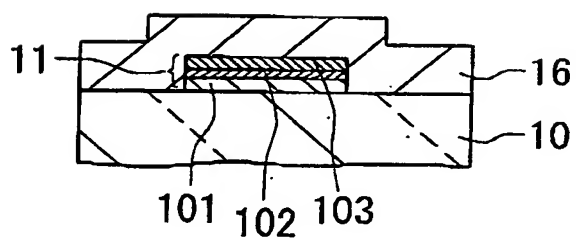


FIG. 5C

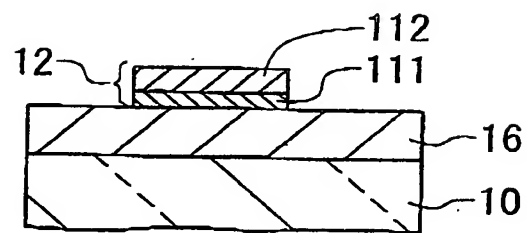


FIG. 6A

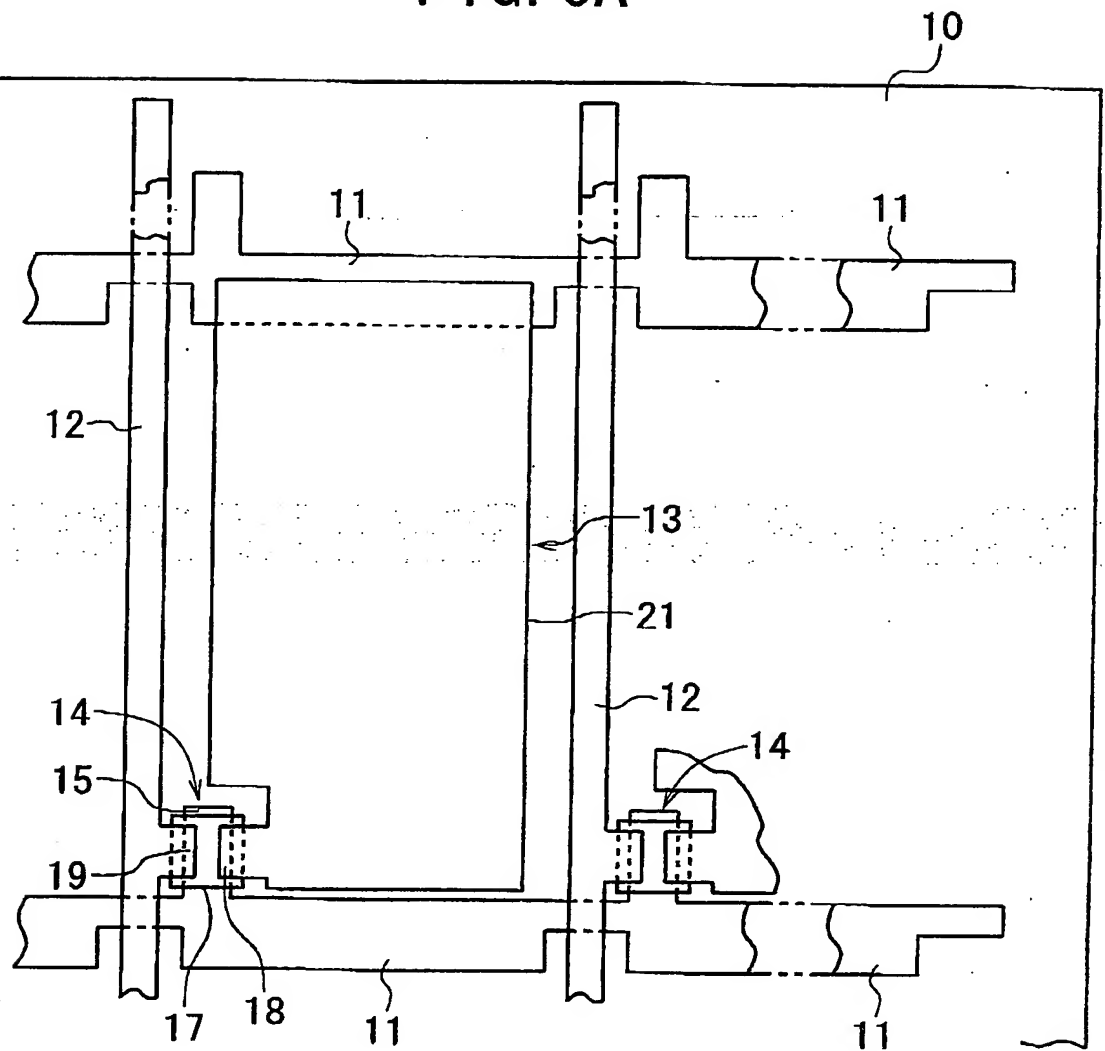


FIG. 6B

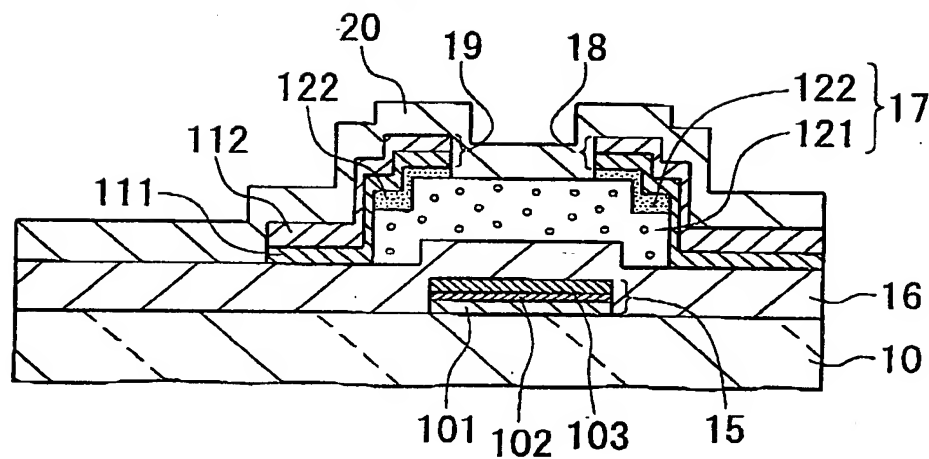


FIG. 6C

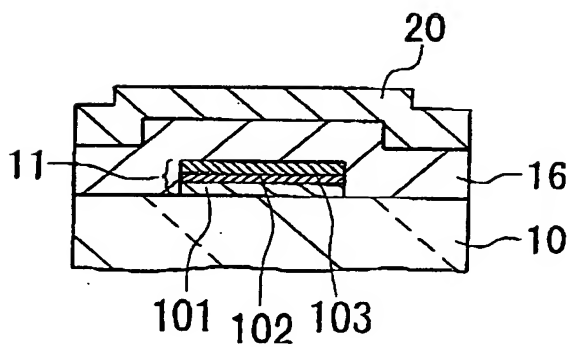


FIG. 6D

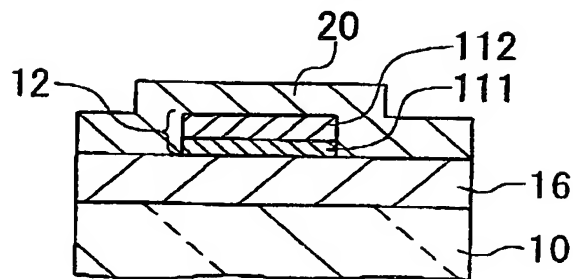


FIG. 7

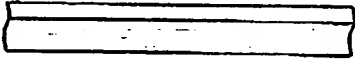
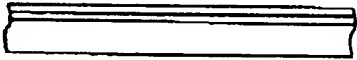
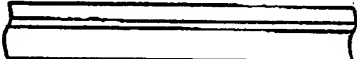
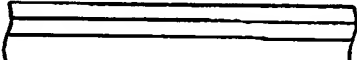
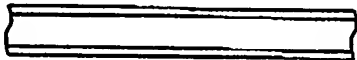
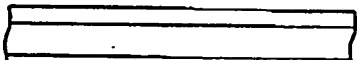
No.	MULTILEVEL STRUCTURE (THICKNESS UNIT: nm)	HEAT TREATMENT	Al HILLOCK NUMBER (pieces/mm ²)
1	TiN (100) / Al (200) 		6410
2	TiN (50) / Ti (50) / Al (200) 		26
3	TiN (100) / Ti (50) / Al (200) 	N ₂ ATMOSPHERE 300°C, 1Hr	~4
4	TiN (100) / Ti (100) / Al (200) 		~1
5	TiN (50) / Al (200) / Ti (30) 		0
6	TiN (100) / Al (200) / Ti (30) 		0

FIG. 8

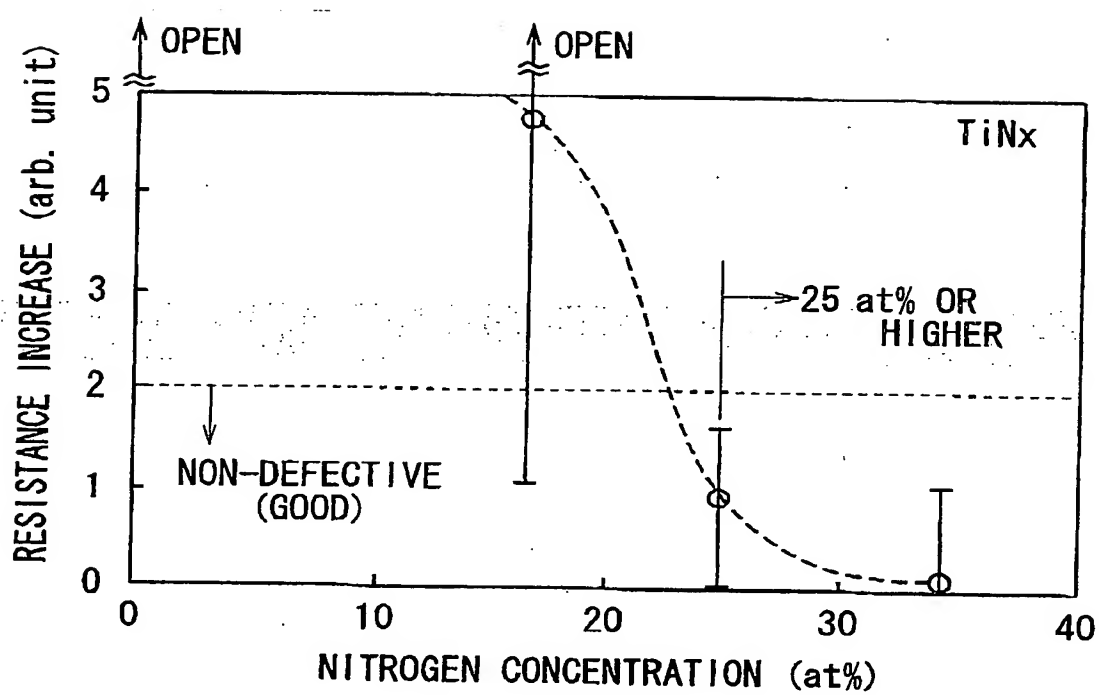


FIG. 9A

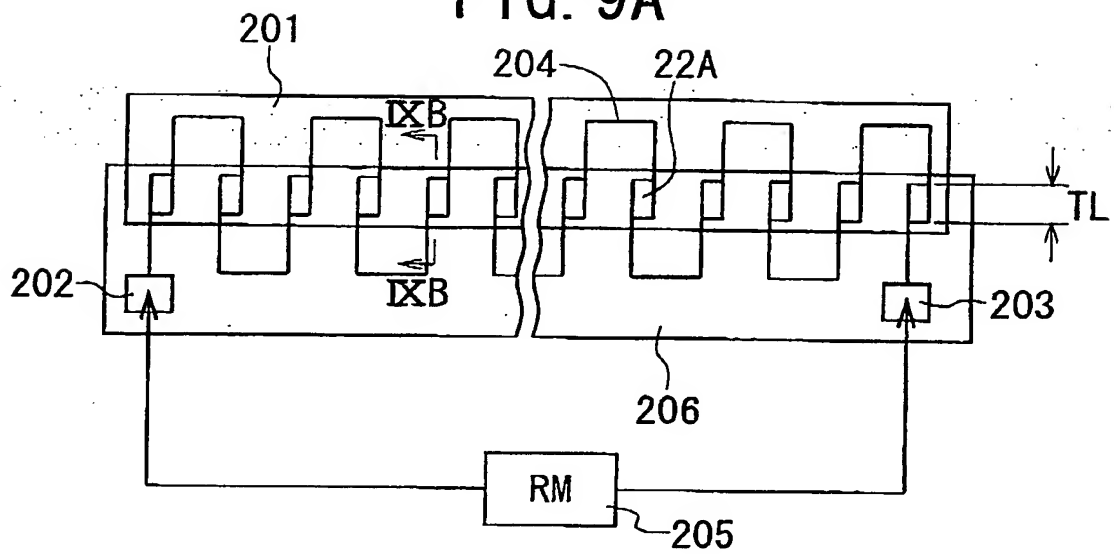


FIG. 9B

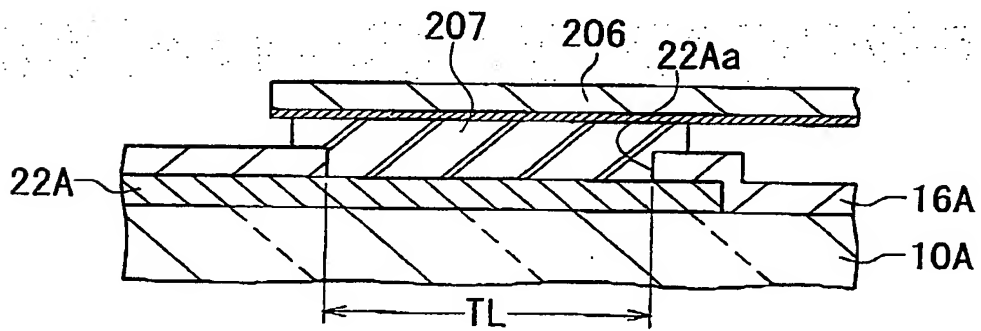


FIG. 9C

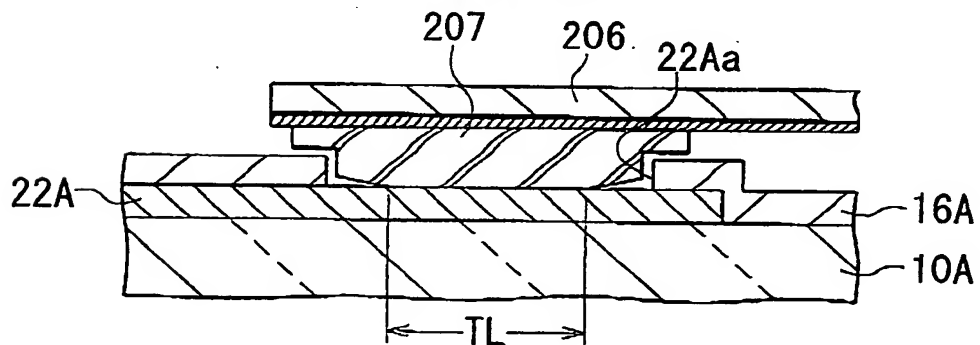


FIG. 10

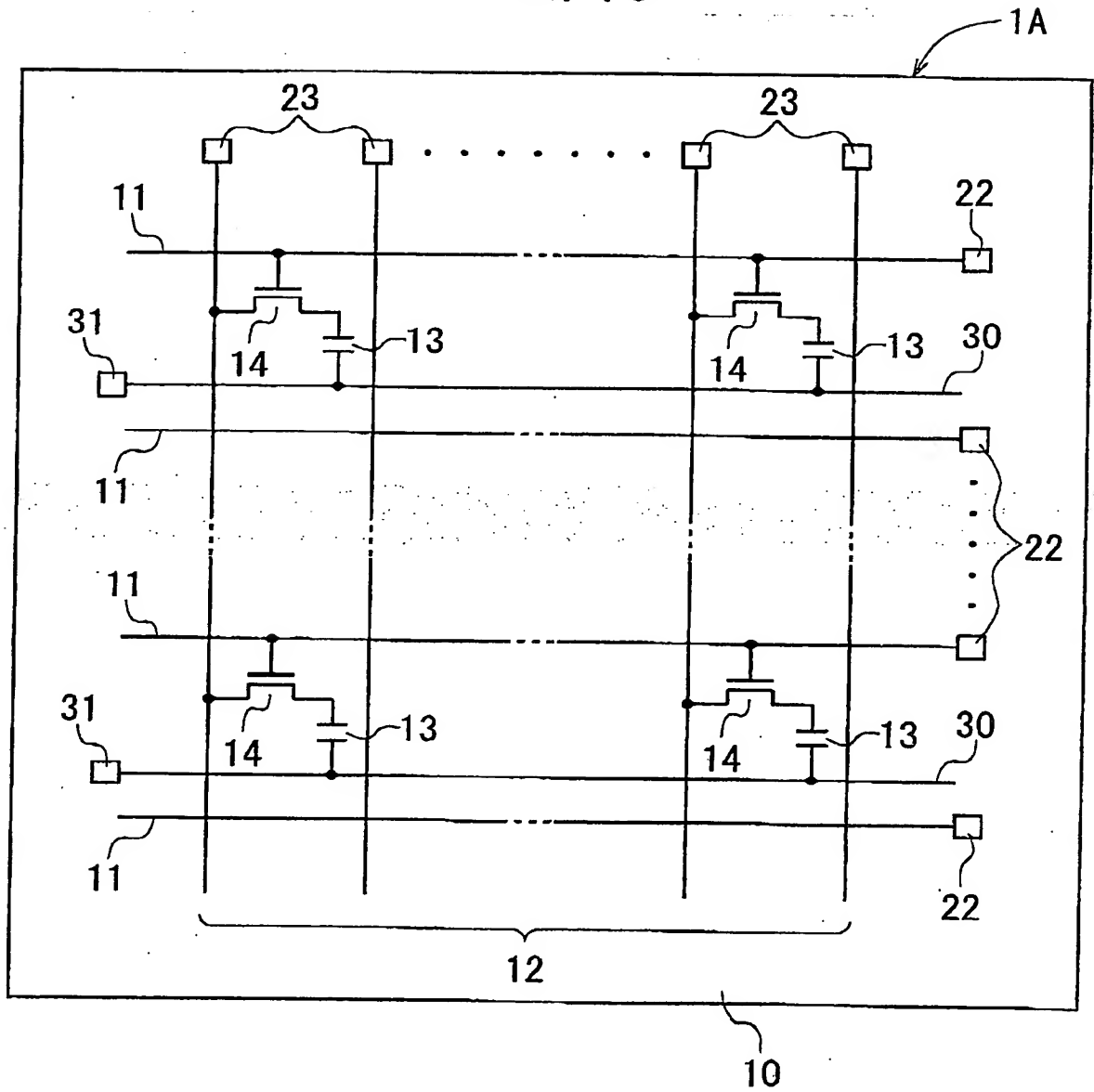


FIG. 11A

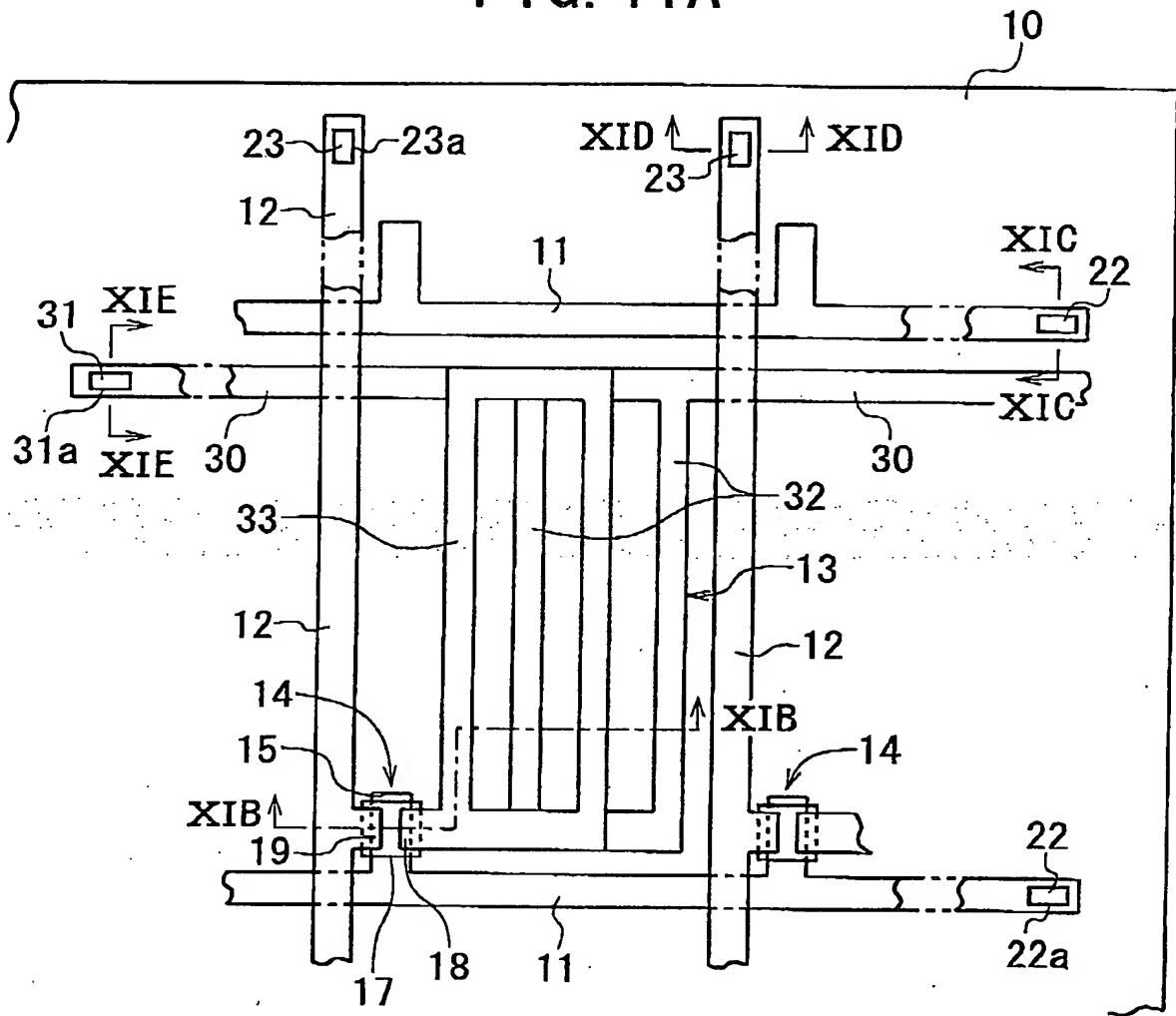


FIG. 11B

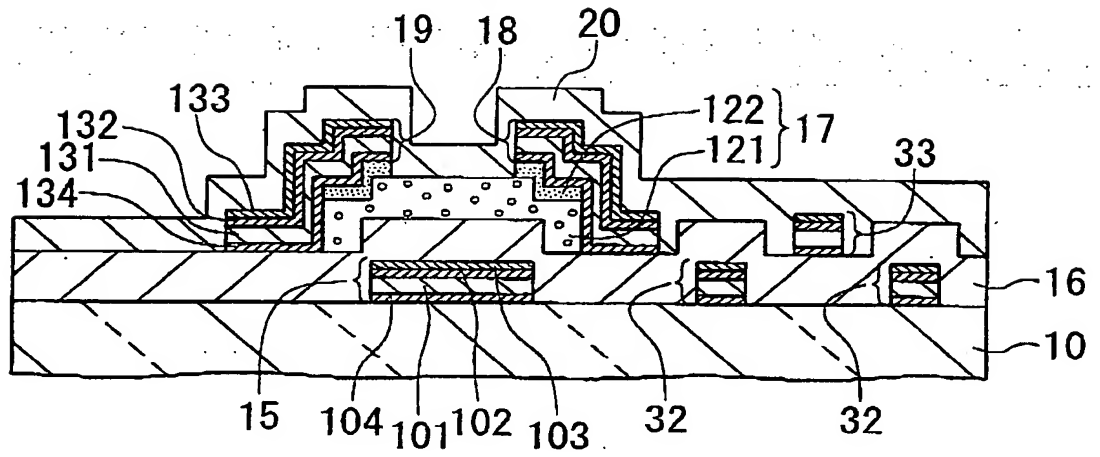


FIG. 11C

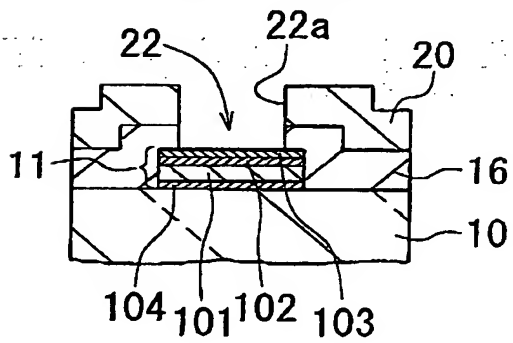


FIG. 11D

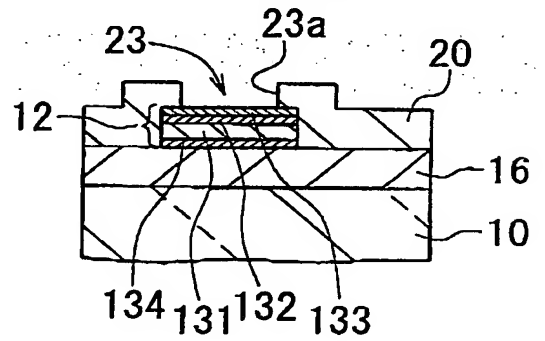


FIG. 11E

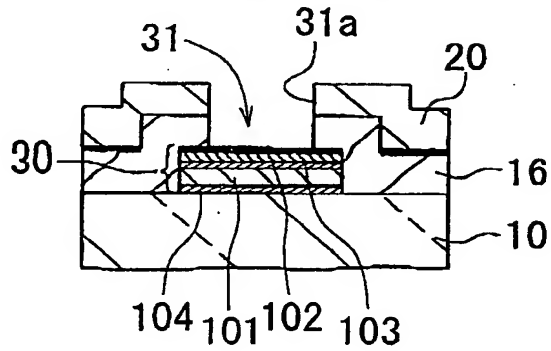


FIG. 12A

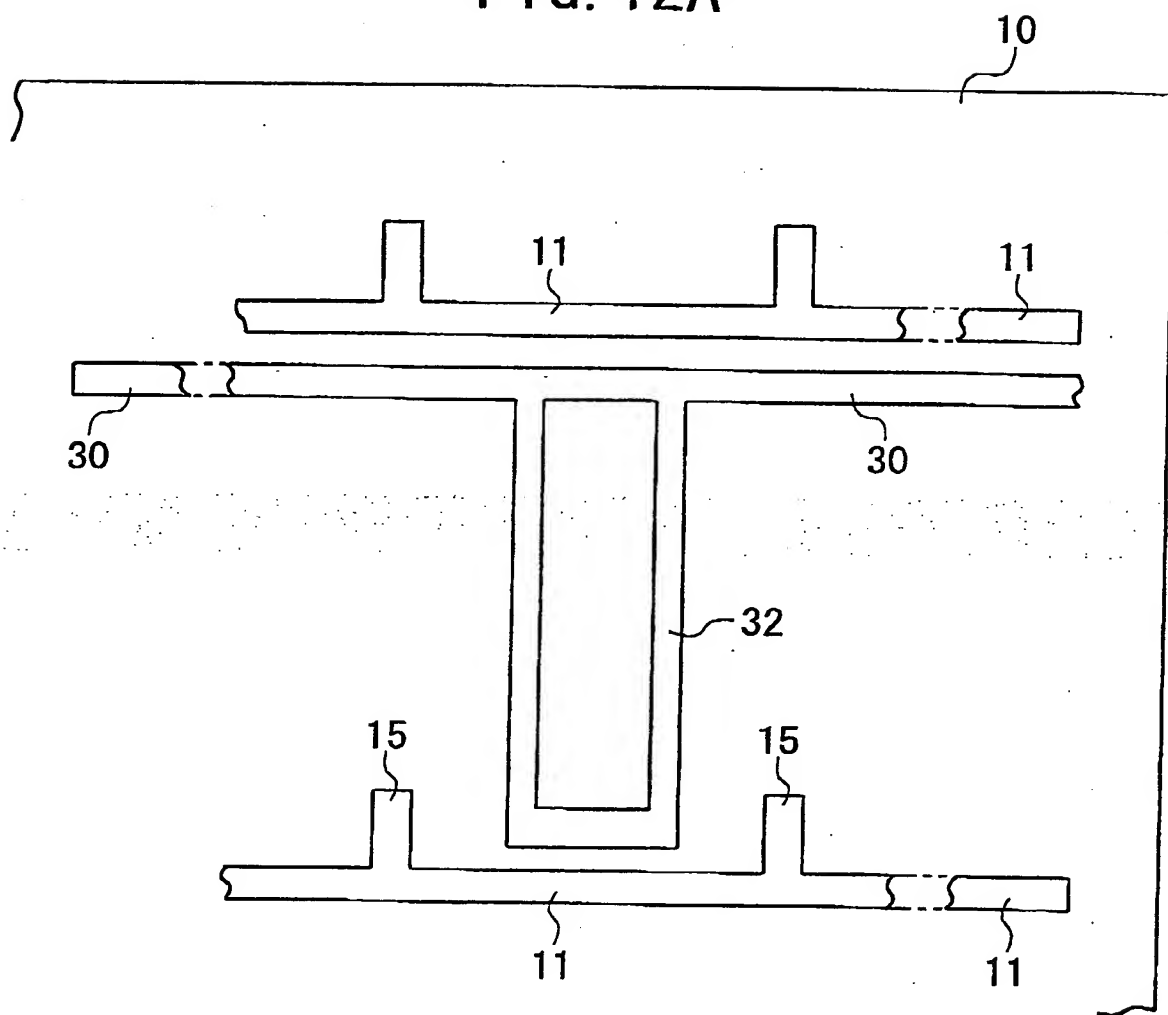


FIG. 12B

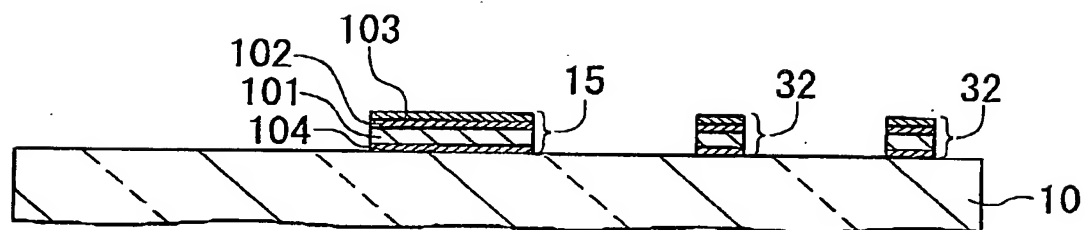


FIG. 12C

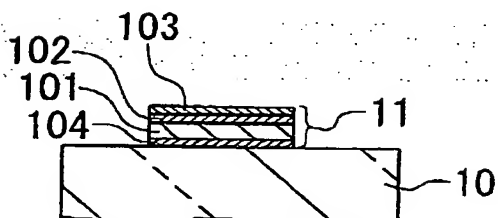


FIG. 12D

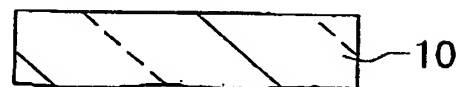


FIG. 12E

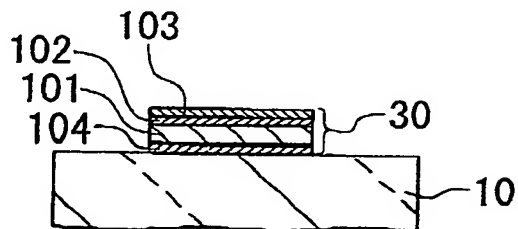


FIG. 13A

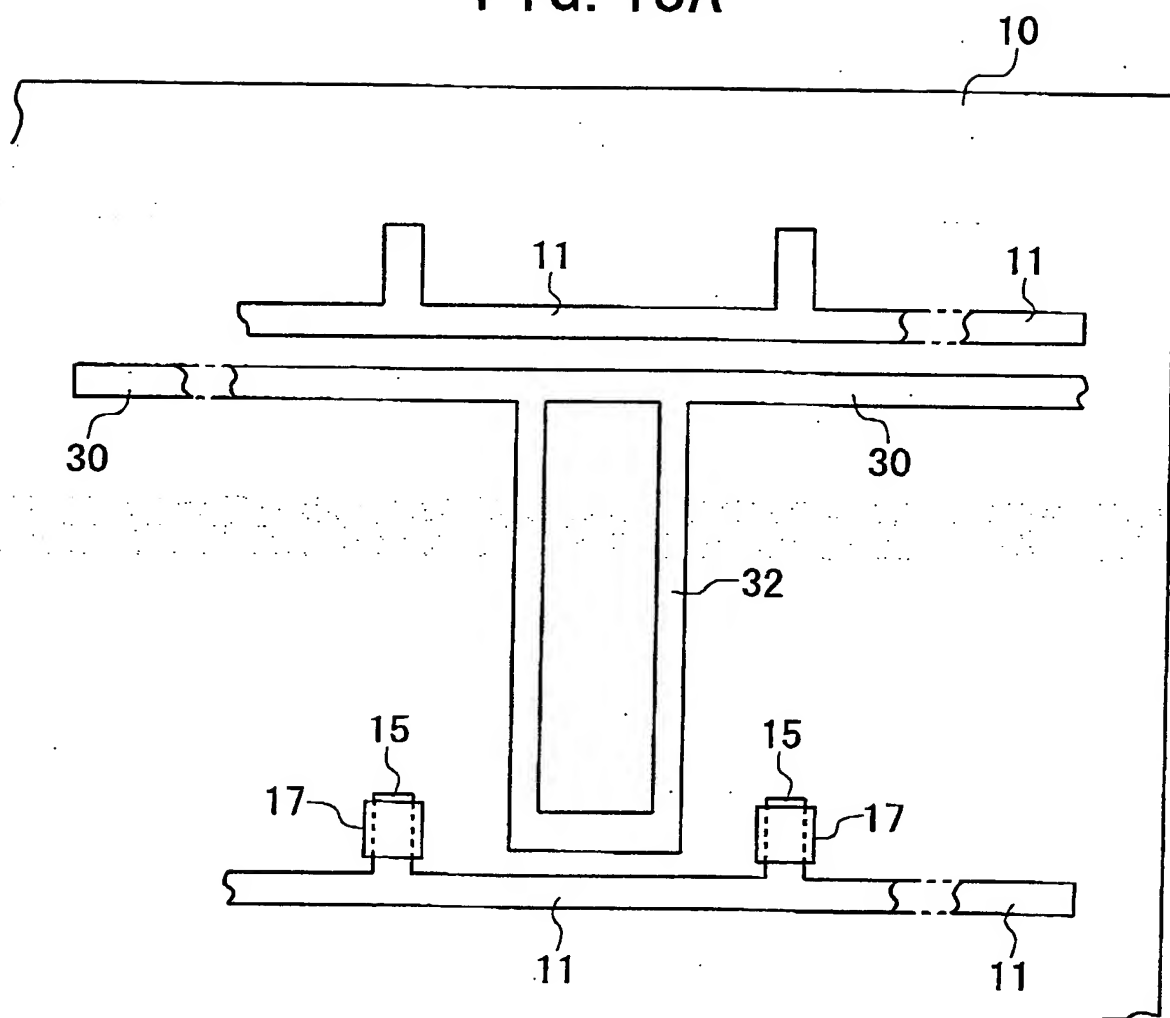


FIG. 13B

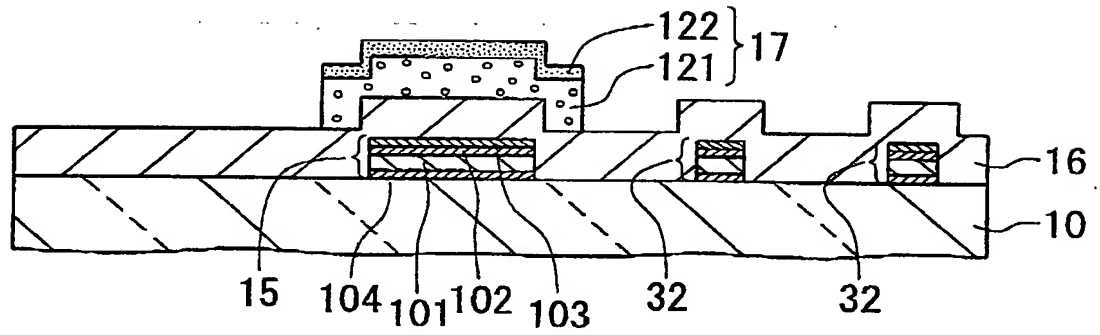


FIG. 13C

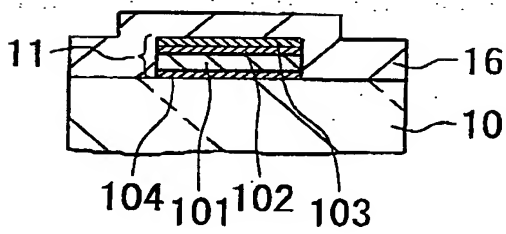
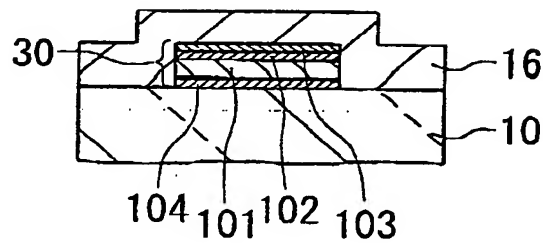


FIG. 13D



FIG. 13E



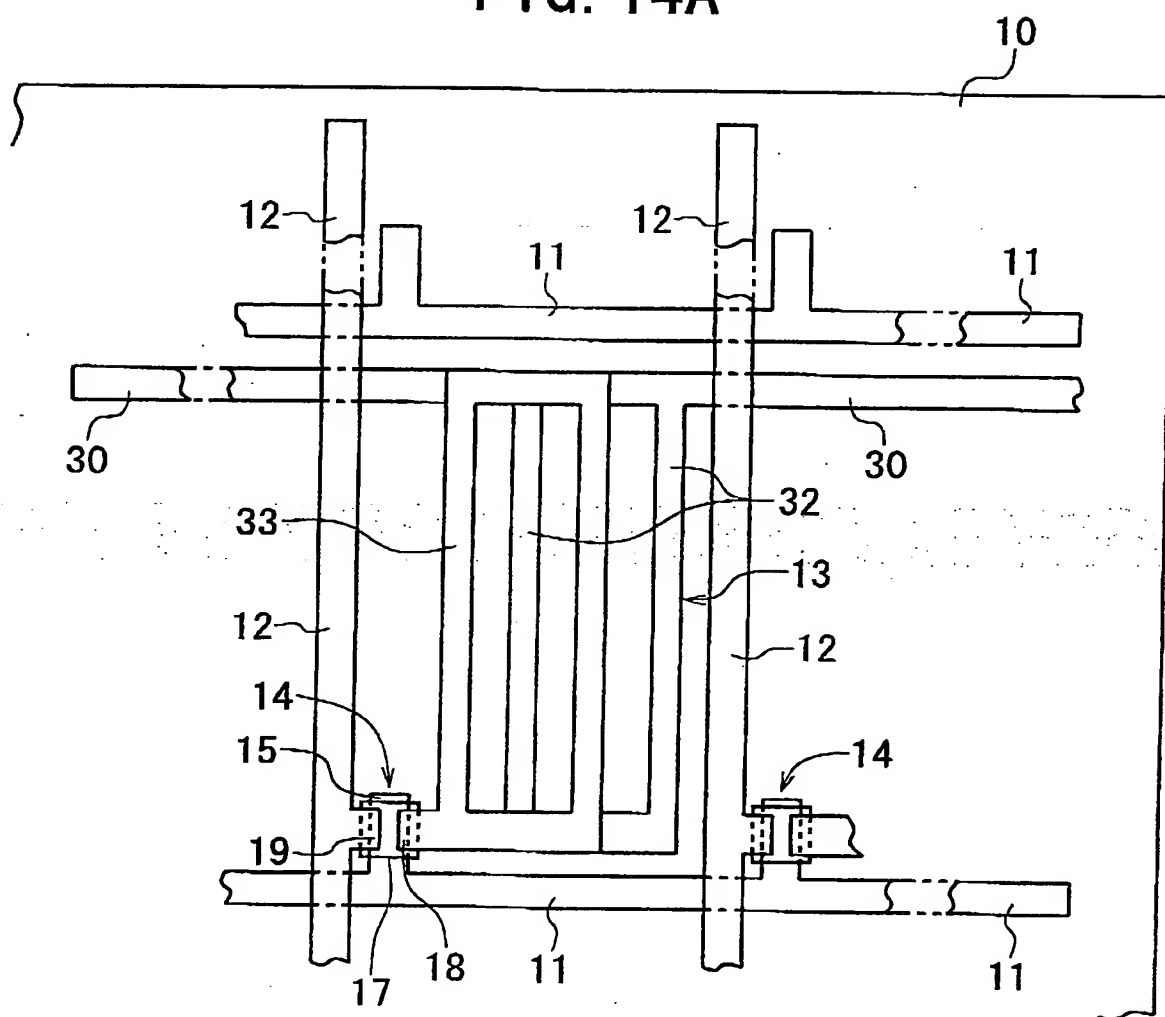


FIG. 14B

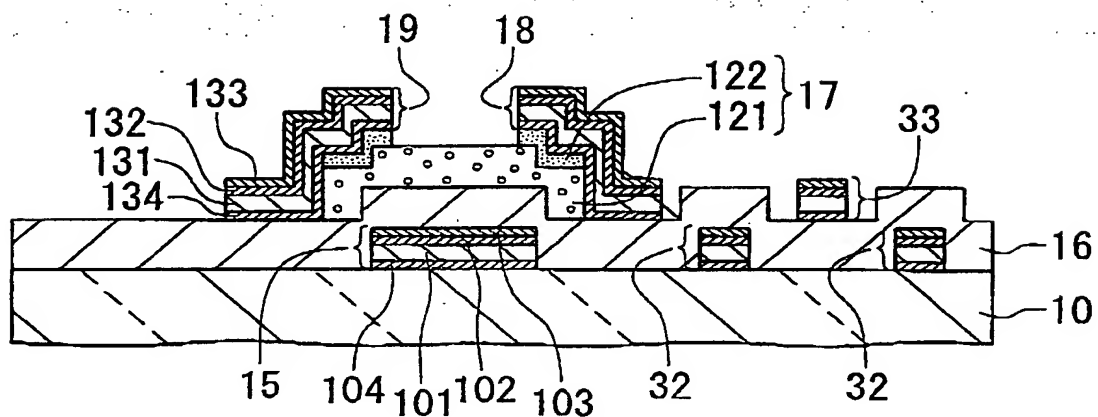


FIG. 14C

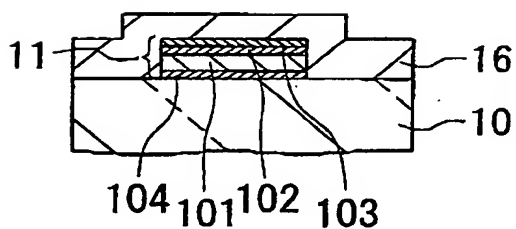


FIG. 14D

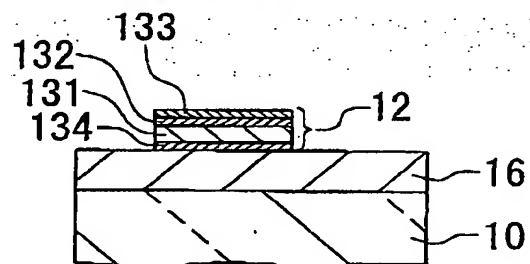


FIG. 14E

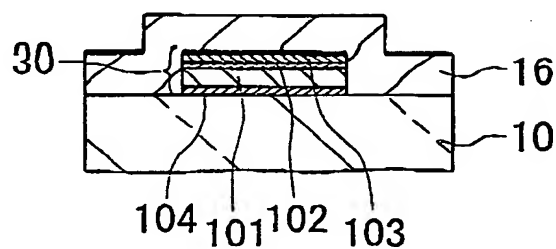


FIG. 15A

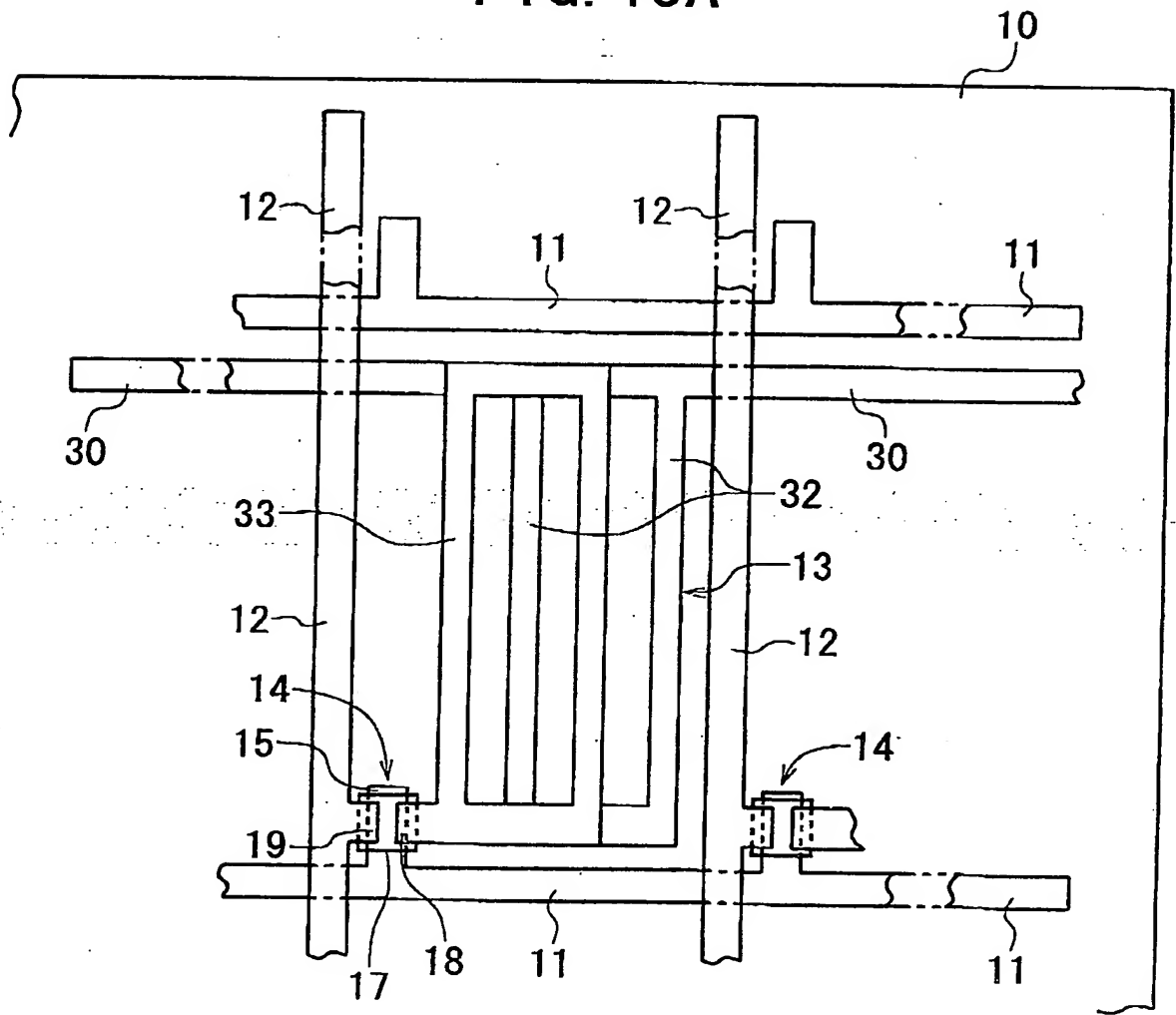


FIG. 15B

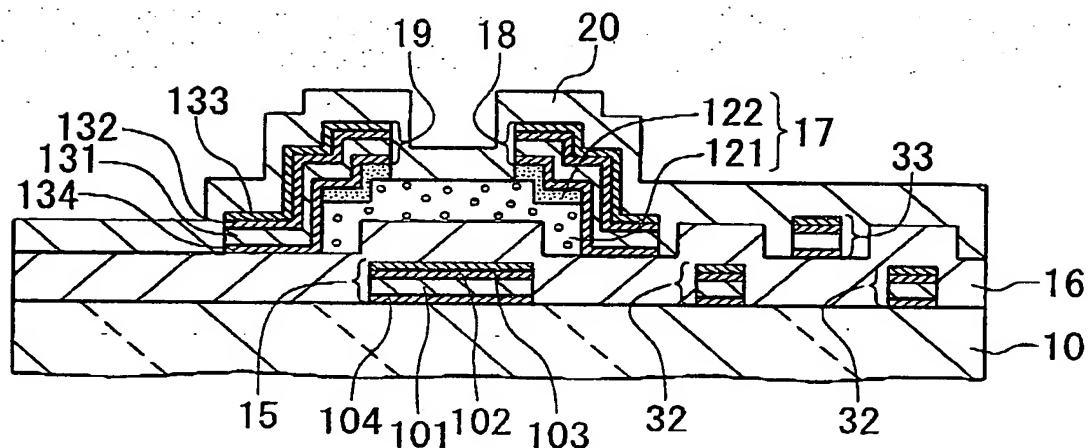


FIG. 15C

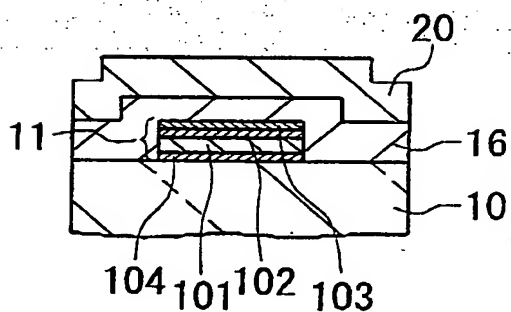


FIG. 15D

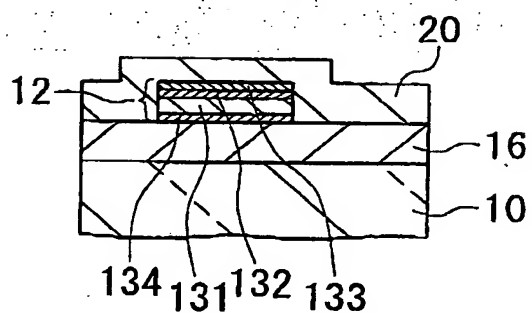


FIG. 15E

